

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re
For



: Application of Miller et al.
: **METHOD AND APPARATUS FOR**
: **TRANSPORTING POWDER COATING**
: **MATERIAL FROM A BOX SHAPED**
: **CONTAINER**
Serial No. : 08/126,391
Filed : September 23, 1993
Group Art Unit : 3102
Examiner : A. Pike
Our Docket No. : NR-103CIP

October 10, 1994

BOX NON-FEE AMENDMENT
HON. COMMISSIONER OF PATENTS & TRADEMARKS
WASHINGTON, D.C. 20231

AMENDMENT

Sir:

In response to the Office Action mailed September 16, 1994, please amend the referenced application as follows:

IN THE CLAIMS

Please amend the following claims 1-3, 6-8, 10-20, 24-27, 36 and 39 as follows:

1.(amended) An apparatus for unloading powder from a box shaped container, comprising:

a support structure;

a cradle [means] mounted to said support structure for supporting said box shaped container at an angle with respect to horizontal in a tilted position, said box shaped container having a lower most interior portion in said tilted position;

a pick-up tube having a lower inlet end with at least one inlet opening adapted to being positioned within said container in said lowermost interior portion, said pick-up tube having an upper outlet end for discharging powder; and

[means] a powder pump associated with said upper outlet end and said pick-up tube for drawing powder from said box shaped container, into said inlet opening of said pick-up tube and discharging the powder from said outlet end.

2.(amended) The apparatus of claim 1 wherein said cradle [means] has a base plate and two adjoining side plates mounted vertically upward therefrom and converging therewith to form a cradle corner, said cradle being adapted to support said container with a container bottom surface on said base plate, two adjoining container sides against said side plates and a lower container corner in said cradle corner, said lower container corner comprising said lowermost interior portion, and the plane through said base plate extending at an angle with respect to said horizontal.

3.(amended) The apparatus of claim 1 further comprising [means] a vibrator associated said cradle [means] for moving said powder material towards said lower container corner.

4. The apparatus of claim 1 wherein said hollow pick-

up tube has a closed lower end.

5. The apparatus of claim 4 wherein said hollow pick-up tube has inlet holes extending through the walls above said closed end.

6.(amended) The apparatus of claim 3 wherein said [means associated said cradle means for moving said powder comprises] vibrator [means] is attached to said cradle for vibrating said powder to loosen the powder and thereby encourage said powder to move by gravity towards said lowermost interior portion of said container.

7.(amended) The apparatus of claim 6 further comprising a vibration damping [means] device installed between said cradle and said support structure.

8.(amended) The apparatus of claim 1 wherein said [means for drawing powder from said box shaped container comprises] powder pump [means] is attached to said upper outlet end of said tube for transferring the powder drawn out of said box shaped container into a feed tube for delivery to a powder spray gun.

9. The apparatus of claim 8 wherein said feed tube has an outlet which is directly connected to a powder inlet of

said powder spray gun.

10.(amended) An apparatus for unloading powder from a plastic liner within a box shaped container, comprising:

a support structure;

a cradle [means] mounted to said platform for supporting said box shaped container in a tilted position with respect to horizontal, said box shaped container having a lowermost interior portion in said tilted position;

a pick-up tube having a lower end and at least one inlet opening being adapted to be positioned within said box shaped container in said lowermost interior portion, said pick-up tube having an upper outlet end for discharging powder, said lower end of said pick-up tube being closed and said inlet opening positioned above said closed end; and

[means] a powder pump for drawing powder from said box shaped container through said inlet opening of said pick-up tube and out of said upper outlet end.

11.(amended) The apparatus of claim 10 wherein said cradle [means] has a base plate and two adjoining side plates mounted vertically upward therefrom and converging therewith to form a cradle corner, said cradle [means] being adapted to support a bottom surface of said box shaped container on said base plate, and two adjoining sides of said box shaped container against said side plates and a

lower container corner of said box shaped container in said cradle corner.

12.(amended) The apparatus of claim 10 further comprising [means] a vibrator associated with said cradle [means] for moving said powder within said box shaped container towards said lowermost interior portion.

13.(amended) The apparatus of claim 10 wherein said support structure is equipped with wheels so that said [powder unloading] apparatus for unloading powder can be easily moved as a unit.

14.(amended) The apparatus of claim 12 further comprising a control [means] unit mounted on said support structure, said control [means] unit controlling said [means] powder pump for drawing powder from said box shaped container and said [means] vibrator for moving said powder within said box shaped container towards said lowermost interior portion.

15.(amended) The apparatus of claim 12 wherein said [means associated with said cradle means for moving said powder comprises vibrator means] vibrator is attached to said cradle for vibrating said powder to loosen said powder and thereby encourage said powder to move by gravity towards

said lowermost interior portion.

16.(amended) The apparatus of claim 15 further comprising a vibration damping [means] isolation mount installed between said cradle and said support structure.

17.(amended) The apparatus of claim 10 wherein said [means for drawing powder from said box shaped container comprises pump means] powder pump is attached to said upper outlet end of said tube for transferring the powder drawn out of said box shaped container into a feed tube for delivery to a powder spray gun.

18.(amended) The apparatus of claim 14 wherein said [means for drawing powder from said box shaped container comprises pump means] powder pump is attached to said upper outlet end of said tube for transferring the powder drawn out of said box shaped container into a feed tube for delivery to a powder spray gun.

19.(amended) The apparatus of claim 18 further comprising means for electrically interconnecting said control [means] unit to said powder pump [means] and said support structure and [means] a ground strap for electrically grounding said control [means] unit.

20.(amended) An apparatus for unloading powder from a box shaped container, comprising:

a support structure;

a cradle [means] mounted to said support structure for supporting said box shaped container at an angle with respect to horizontal in a tilted position, said box shaped container having a lower most interior portion and an uppermost portion in said tilted position;

a pick-up tube having a lower inlet end with at least one inlet opening adapted to being positioned within said box shaped container in said lowermost interior portion, said pick-up tube extending through a bracket installed on said uppermost portion and having an upper outlet end for discharging powder; and

[means] a powder pump associated with said upper outlet end and said pick-up tube for drawing powder from said box shaped container, into said inlet opening of said pick-up tube and discharging the powder material from said outlet end.

21. The apparatus of claim 20 wherein when said cradle supports said box shaped container in said tilted position said box shaped container has an uppermost corner and a lowermost corner and said lowermost corner comprises said lowermost interior portion and said uppermost corner comprises said uppermost portion.

22. The apparatus of claim 21 wherein said bracket has a pair of clips which clip onto the sides of said box shaped container forming said uppermost corner.

23. The apparatus of claim 22 wherein said bracket includes a plate connected to said clips and having a hole for receiving said pick-up tube.

24.(amended) The apparatus of claim 23 [further comprising a] wherein said powder pump is installed onto the top of said pick-up tube above said [bucket] bracket.

25.(amended) The apparatus of claim 24 wherein said support structure comprises a hand truck having at least one frame member connected to a handle at one end and [having a means for] supporting said cradle [means] above the floor on the other end, and at least two wheels disposed along said at least one frame member between said handle and said [cradle supporting means] other end.

26.(amended) The apparatus of claim [24] 25 further comprising a control unit for operating at least said powder pump, said control unit being supported in a basket [means] which is secured to said frame member[s] so that said control unit can be easily removed and replaced.

27.(amended) The apparatus of claim 24 further comprising [means] a first ground strap for electrically grounding said powder pump [means], said pick-up tube and said bracket to said support structure and [means] a second ground strap for electrically grounding said support structure.

28. A method of unloading powder from a plastic liner within a box shaped container, comprising the steps of:

supporting said box shaped container in a tilted position to produce a lowermost interior portion of said container;

moving said powder within said box shaped container towards said lowermost interior portion; and

drawing powder from said lowermost interior portion out of said box shaped container while preventing said plastic liner from interfering with said step of drawing powder and transferring said powder to a location external to said container.

29. The method of claim 28 wherein the step of moving said powder includes vibrating said powder to loosen said powder and thereby encourage said powder to move by gravity towards said lowermost interior portion.

30. The method of claim 28 wherein said step of

drawing powder from said lowermost interior portion includes transferring said powder drawn out of said box shaped container by a pump through a feed tube directly to a powder spray gun.

31. The method of claim 28 wherein in said supporting step said box shaped container is supported in said tilted position by a cradle which is in turn supported by a support structure, and further comprising the step of damping vibrations being experienced by the powder from being transferred from said cradle to said support structure.

32. A method of unloading powder from a plastic liner within a box shaped container, comprising the steps of:

supporting said box shaped container in a tilted position to produce a lowermost interior portion of said container and an uppermost corner of said container;

installing a bracket with a hole therethrough on said uppermost corner of said container;

inserting a feed tube through said hole of said bracket until the bottom of said feed tube is positioned in said lowermost interior portion of said container;

installing a powder pump on the top of said feed tube;

moving said powder within said container towards said lowermost interior portion; and

drawing powder from said lowermost interior portion out

of said container while preventing said plastic liner from interfering with said step of drawing powder and transferring said powder to a location external to said container.

33. The method of claim 32 wherein the step of moving said powder includes vibrating said powder to loosen said powder and thereby encourage said powder to move by gravity towards said lowermost interior portion.

34. The method of claim 32 wherein said step of drawing powder from said lowermost interior portion includes transferring said powder drawn out of said container by said powder pump through said feed tube directly to a powder spray gun.

35. The method of claim 32 wherein in said supporting step said box shaped container is supported in said tilted position by a cradle which is in turn supported by a support structure.

36.(amended) An apparatus for unloading powder from a box shaped container, comprising:

a support structure;

a cradle [means] mounted to said support structure for supporting said box shaped container at an angle with

respect to horizontal in a tilted position, said box shaped container having a lower most interior portion in said tilted position;

a pick-up tube constructed of spaced inner and outer concentric tubes, a lower inlet end of said pick-up tube having at least one inlet opening in said box shaped outer concentric tube adapted to being positioned within said container in said lowermost interior portion, a vent hole in said outer tube, and an upper outlet end of said pick-up tube for discharging powder; and

al [means] a powder pump associated with said upper outlet end of said pick-up tube for drawing powder from said container into said lower inlet end of said pick-up tube and drawing air through said vent hole and down through said inner concentric tube whereby said air and powder are mixed to fluidize said powder and discharge said powder from said outlet end.

37. The apparatus of claim 36 wherein said pick-up tube has a closed lower end.

38. The apparatus of claim 37 wherein said pick-up tube has at least two inlet openings extending through said outer concentric tube above said closed lower end.

39.(amended) An apparatus for unloading powder from a

box shaped container, comprising:

a support structure;

a cradle [means] mounted to said support structure for supporting said box shaped container at an angle with respect to horizontal in a tilted position, said container having a lower most interior portion and an uppermost portion in said tilted position;

a pick-up tube constructed of spaced inner and outer concentric tubes, a lower inlet end of said pick-up tube having at least one inlet opening in said outer concentric tube adapted to being positioned within said container in said lowermost interior portion, a vent hole in said outer tube, and said pick-up tube extending through a bracket installed on said uppermost portion and having an upper outlet end for discharging powder; and

[means] a powder pump associated with said upper outlet end and said pick-up tube for drawing powder from said box shaped container[,] into said inlet opening of said pick-up tube and discharging the powder material from said outlet end.

40. The apparatus of claim 39 wherein said pick-up tube has a closed lower end.

41. The apparatus of claim 40 wherein said pick-up tube has at least two inlet openings extending through said

A outer concentric tube *B* above said closed lower end.

REMARKS

Claims 1-41 are pending in the referenced application.

Restriction to one of the following inventions was required under 35 U.S.C. 121:

Group I) Claims 1-27 and 36-41, drawn to an apparatus for unloading powder, classified in class 406, subclass 141; and

Group II) Claims 28-35, drawn to a method of unloading powder, classified in class 406, subclass 151.

The inventions were held distinct from each other because the apparatus as claimed can be used to practice another materially different process such as drawing the powder through the pick-up tube pneumatically.

In addition, for each invention, the claims were held directed to the following patentable distinct species of the claimed invention. For Group I, Species 1, shown in Fig. 1, was held readable upon by claims 1-19 and 36-38; and Species 2, shown in Fig. 5, was held readable upon by claims 1-6, 8-15, 17-27 and 39-41. For Group II, Species 1, shown in Fig. 1, was held readable upon by claims 28-31; and Species 2,

shown in Fig. 5, was held readable upon by claims 28-30 and 32-35. For Group 1, claims 1-6, 8-15 and 17-19 were held generic; and for Group 2, claims 28-30 were held generic.

Applicants elect without traverse to prosecute the invention of Group I) including Claims 1-27 and 36-41. Also, Applicants elect without traverse Species 1, shown in Fig. 1, including claims 1-19 and 36-38, for prosecution if no generic claim is finally held to be allowable.

The claims have been amended to further clarify the invention and broaden the invention in view of recent CAFC decisions.

Favorable reexamination and reconsideration are respectfully requested.

Respectfully submitted,



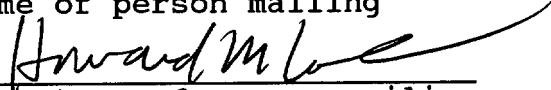
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In re Application of: Miller et al.

Serial Number: 08/126,391

Filed: 9/23/93

For: METHOD AND APPARATUS FOR TRANSPORTING POWDER
COATING MATERIAL FROM A BOX SHAPED CONTAINERBOX NON-FEE AMENDMENT
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In re Application of: Miller et al.

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Filed: 9/23/93

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